REMARKS

This Application has been reviewed in light of the Office Action mailed November 30, 2004. All pending claims 1-13 were rejected in the Office Action. Claims 1, 2, 4-6, 9, 10 and 12 have been amended to further clarify the claimed subject matter. Applicants respectfully request reconsideration and allowance of all pending Claims 1-13.

Section 112 Rejections

Claims 1-13 are rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement. The Examiner asserts that the claims contain subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

However, not every bit of information needed to practice and an invention need be disclosed in an application. In fact, what is well-known is best omitted. *In re Buchner*, 929 F.2d 660, 661, 18 USPQ.2d 1331, 1332 (Fed. Cir. 1991). All that is necessary is that one skilled in the art be able to practice the claimed invention, given the level of knowledge and skill in the art at the time the application was filed.

Specifically, the Examiner argues that the present application does not sufficiently describe the claimed "network simulator." The Examiner also states the following:

> While the specification makes reference to the network simulator communicating with the software emulators, and simulating the communications between simulated devices on the simulated network (page 10, line 24 to page 11, line 7), it provides no algorithms, techniques, or flow charts describing specifically how the claimed simulated network is actually implemented by the network simulation system.

However, the claims recite an overall simulation system for testing software that includes various other components besides the network simulator (for example, a hardware interface, an emulator stub, an event handler, and a user interface). It is this overall system and the

interaction of the components of this overall system that is described and claimed. The Examiner is arguing that one component of this overall system – the network simulator – is not sufficiently described. However, the Examiner also argues in paragraph 4 of the Office Action that network simulators, such as OPNET Modeler, BONeS, and COMNET, were commercially available at the time the present application was filed. Also, the Examiner rejects the claims, in part, in light of a reference that allegedly teaches the network simulator portion of the claims.

Therefore, there is ample evidence that one skilled in the art at the time of the invention would not have needed to perform undue experimentation to implement a network simulator as recited in the claims of the present application. Applicants provide a architecture (illustrated in Figure 3) that identifies the relevant components of the network simulator and the function and interaction of each. These components are described at pages 10-20 of the application. With such a disclosure, one of skill in the art would not need undue experimentation to implement this architecture and the architecture of the overall system for testing software. For at least these reason, Applicants respectfully request reconsideration and favorable action.

Section 103 Rejections

Claims 1-13 are rejected under 35 U.S.C. §103(a) as being unpatentable over X. Chang, "Network Simulations with OPNET" ("*Chang*") in view of U.S. Patent No. 6,571,356 issued to Mehr et al. ("*Mehr*").

In order to establish a *prima facie* case of obviousness, three requirements must be met: (1) there must be some suggestion or motivation, either in the references themselves or in the knowledge available to one skilled in the art, to modify a reference or combine multiple references; (2) there must be a reasonable expectation of success; and (3) the prior art reference (or combination of references) must teach or suggest all of the claim limitations. M.P.E.P. § 2143. In the present case, a *prima facie* case of obviousness cannot be maintained for at least two reasons. First, neither *Chang* nor *Mehr* provides a suggestion or motivation to combine these two references. Second, even assuming for the sake of argument that the references did suggest or motivate a combination of the references to a person of ordinary

skill in the art at the time of the invention, *Chang* and *Mehr,* whether considered singly, in combination with one another, or in combination with information generally available to those of ordinary skill in the art at the time of the invention, still fail to disclose all of the elements of independent Claims 1, 6, and 9.

A. No Motivation or Suggestion to Combine *Chang* and *Mehr*

The M.P.E.P. sets forth a strict legal standard for finding obviousness based on a combination of references. According to the M.P.E.P., "Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge [that was] generally available to one of ordinary skill in the art" at the time of the invention. M.P.E.P. 2143.01. The "fact that references can be combined or modified does not render the resultant combination [or modification] obvious unless the prior art also suggests the desirability of the combination" or modification. *Id.* (emphasis in original).

The governing Federal Circuit case law makes this strict legal standard even more clear. According to the Federal Circuit, "a showing of a suggestion, teaching, or motivation to combine . . . prior art references is an essential component of an obviousness holding." *In re Sang-Su Lee*, 277 F.3d 1338, 1343 (Fed. Cir. 2002) (quoting *Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120, 1124-25 (Fed. Cir. 2000)). "Evidence of a suggestion, teaching, or motivation . . . may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, the nature of the problem to be solved. " *In re Dembiczak*, 175 F.3d 994, 999 (Fed. Cir. 1999). However, the "range of sources available . . . does not diminish the requirement for actual evidence." *Id.* In *In re Dembiczak*, the Federal Circuit reversed a finding of obviousness by the Board of Patent Appeals and Interferences, explaining that proper evidence of a teaching, suggestion, or motivation to combine is essential to avoid impermissible hindsight reconstruction of an applicant's invention:

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[1] Note M.P.E.P. 2145(X)(C) ("The Federal Circuit has produced a number of decisions overturning obviousness rejections due to a lack of suggestion in the prior art of the desirability of combining references.").

> Our case law makes clear that the best defense against the subtle but powerful attraction of hind-sight obviousness analysis is *rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references*. Combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability—the essence of hindsight.

175 F.3d at 999 (quoting *W.L. Gore & Assoc., Inv. v. Garlock, Inc.*, 721 F.2d 1540, 1553 (Fed. Cir. 1983)) (emphasis added).[2]

In the present case, the Examiner is improperly using the Applicant's disclosure as a blueprint for piecing together various elements of *Chang* and *Mehr*. For example, the Examiner asserts that an obvious motivation exists since both *Chang* and *Mehr* teach network simulation. However, *Mehr* does not teach network simulation. It does not disclose any type of network or other hardware simulation. It appears that the Examiner is alleging that the "emulator" of *Mehr* is what is performing simulation. This emulator actually includes a microprocessor 32 that would normally be plugged in socket 18 of an electronics system being tested (target system 20). Instead of being plugged into this socket, the microprocessor is connected to the socket via other components of the emulator and by a connector 16. This type of connection allows the microprocessor to also be connected to one or more host computers that are operable to configure and control the operation of the emulator and to obtain diagnostic data from the emulator. *See Mehr*, Column 2, line 64 – Column 3, line 24. Therefore, there is no disclosure in *Mehr* of the simulation of a network or of any type of hardware. Instead, *Mehr* discloses the testing of actual hardware (target system 20), not the testing of software, as is claimed. The emulator of *Mehr* simply provides a hardware interface that allows the host computers (and their associated software used to communicate with the emulator) to access the communications between the microprocessor 32 and the target system 20. *Mehr* does not disclose the simulation of hardware or the testing of software using simulated hardware.

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[2] *See also In Re Jones*, 958 F.2d 347, 351 (Fed. Cir. 1992) ("Conspicuously missing from this record is any evidence, other than the PTO's speculation (if that can be called evidence) that one of ordinary skill in the herbicidal art would have been motivated to make the modification of the prior art salts necessary to arrive at" the claimed invention.).

Furthermore, *Chang* only discloses the simulation of network hardware. The Examiner states that *Chang* teaches to *Mehr* because *Chang* "discloses the simulation of various network hardware components in communication with simulation network components." First, Applicants do not understand the Examiner's distinction between "the simulation of various network hardware components" and "simulation network components." But in any case, *Chang* does not relate to *Mehr* since *Mehr* is not related to network or hardware simulation, only testing of actual hardware. Therefore, although *Chang* may disclose simulation of network hardware and although *Mehr* may disclose a hardware interface (the emulator) for providing software with access to hardware being tested (a microprocessor-based system), there is simply no suggestion in either reference to modify and combine these references to disclose the present invention. Furthermore, the Examiner does not explain exactly how one of these references could be modified by the other to teach the limitations of the present invention. Neither reference discloses an interface between hardware being simulated and software being tested in conjunction with that simulated hardware, and it would not make sense (and would destroy the intended operation of the systems in these references) to somehow modify and combine these references to teach the present invention.

Consequently, a *prima facie* case of obviousness cannot be maintained with respect to Claims 1, 6, and 9 (or the claims that depend from these independent claims), as the Examiner has not shown the requisite proof necessary to establish a suggestion or motivation to combine the cited references. For at least this reason, Applicant respectfully requests reconsideration and allowance of Claims 1, 6, and 9 (and the claims that depend from these independent claims).

B. *Chang* and *Mehr* Fail to Disclose, Teach, or Suggest Each and Every Element of the Claims

Even assuming for the sake of argument that the cited references did suggest or motivate a combination of the references to a person of ordinary skill in the art at the time of the invention, *Chang* and *Mehr*, whether considered singly, in combination with one another,

or in combination with information generally available to those of ordinary skill in the art at the time of the invention, would still fail to disclose each and every element of Claims 1, 6, and 9.

For example, Independent Claim 1, as amended, recites the following:

> A hardware simulation system for simulating hardware on which software is to be tested comprising:
> a hardware interface for intercepting and redirecting communications between the software being tested and the simulated hardware and returning responses to the software;
> a network simulation system in communication with said hardware interface for providing simulated hardware and generating responses to the software; and
> a user interface for entering user commands for creating a simulated network, defining topology of said simulated network, and for invoking said simulated network, said user interface being in communication with said network simulation system; wherein
> said network simulation system includes:
> a network simulator for simulating functionality of said simulated network, said network simulator being in communication with said hardware interface;
> a simulator library for providing an application programmers interface for creating said simulated network and for defining functionality of said simulated network; said simulator library being in communication with said network simulator and said user interface;
> an emulator stub for translating communications between said network simulator and said hardware interface; said emulator stub being in communication with said hardware interface; and
> an event handler for directing communications received by said emulator stub and returning communications to said emulator stub.

Claims 6 and 9 recite similar, although not identical, limitations.

Among other aspects of Claim 1, *Chang* and *Mehr* fail to disclose "a hardware interface for intercepting and redirecting communications between the software being tested and the simulated hardware and returning responses to the software." The Examiner asserts that *Mehr* discloses this limitation. However, as discussed above, *Mehr* does not disclose any interface between software being tested and simulated hardware (since it discloses neither software that is being tested nor simulated hardware). Instead, *Mehr* only discloses an

interface between actual hardware being tested and one or more host computers (and associated software) that may control and monitor the testing.

Furthermore, neither reference discloses the recited "emulator stub for translating communications between said network simulator and said hardware interface." The Examiner asserts (in his rejection of Claim 2) that the emulator stub is disclosed by the description in *Mehr* of a "proxy (emulated) stub." *Mehr* discloses a "stub 56" and a "remote object proxy 66," but not a "proxy stub." Therefore, Applicants are unsure to which component the Examiner is referring. In any case, neither of these components is disclosed as translating communications between a network simulator and a hardware interface. First, there is no disclosure that either component translates communications. Second, there are no disclosed communications between a network simulator and a hardware interface (for the same reasons discussed above).

Moreover, neither reference discloses "an event handler for directing communications received by said emulator stub and returning communications to said emulator stub." The Examiner asserts that *Chang* discloses an event handler (in his rejection of Claim 2), but the Examiner's argument appears directed towards the "user event handler" recited in Claim 2, not the "event handler" now recited in Claim 1. There is no disclosure in either reference of such a handler that directs communications to and from an emulator stub.

For at least these reasons, Applicants respectfully submits that amended Claims 1, 6, and 9, as well as the claims that depend from these independent claims, are in condition for allowance. Therefore, reconsideration and favorable action are requested.

In addition to depending on an allowable independent claim, dependant Claims 4 and 12 are also in condition for allowance since neither *Chang* nor *Mehr* discloses:

> (i) a simulator stub for translating communications between said hardware interface and said simulated hardware and said software; said simulator stub being in communication with said simulated hardware and software;

(ii) a hardware interface event handler for redirecting communications between the simulated hardware, software and network simulator; or

(iii) an IP stub for translating communications from said hardware interface and said simulator system.

In rejecting these claims, the Examiner generically refers to the "proxy stub" purportedly disclosed in *Mehr* (as discussed above), a reference to a "stub" taught by *Chang* (there is no specific citation to *Chang* and Applicants cannot find any disclosure of such a stub in *Chang*), and the hardware interface of *Mehr*. With respect to the recited simulator stub and IP stub, the Examiner does not identify how any component of *Chang* or *Mehr* performs the functions associated with these components that are identified in the claims. Furthermore, there is no disclosure that the hardware interface of *Mehr* includes a hardware interface event handler for redirecting communications and it certainly does not disclose such a component that redirects communications between simulated hardware, software and a network simulator. For at least these additional reasons, Applicants respectfully request reconsideration and allowance of Claims 4 and 12.

CONCLUSION

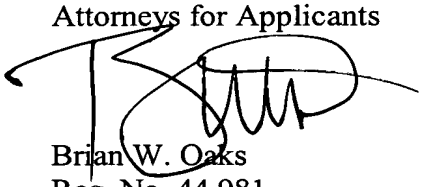
Applicants have made an earnest attempt to place this case in condition for allowance. For the foregoing reasons, and for other reasons clearly apparent, Applicants respectfully request full allowance of all pending claims.

If the Examiner feels that a telephone conference would advance prosecution of this Application in any manner, the Examiner is invited to contact Brian W. Oaks, Attorney for Applicants, at the Examiner's convenience at (214) 953-6986.

No fee is believed to be due. However, the Commissioner is hereby authorized to charge any additional fees or credit any overpayment to Deposit Account No. 02-0384 of BAKER BOTTS L.L.P.

Respectfully submitted,

BAKER BOTTS L.L.P.
Attorneys for Applicants



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